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UNITED STATES DEPARTMENT OF AGRICULTURE
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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
FOREST INSECT INVESTIGATIONS

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TITLE

FOREST INSECT SURVEY - SEASON OF 1947
STANISLAUS NATIONAL FOREST, CALIFORNIA, AND ADJACENT TIMBER LANDS

by

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Berkeley, California
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SUBJECT—

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FOREST INSECT SURVEY
STANISLAUS NATIONAL FOREST, CALIF., AND ADJACENT TIMBER LANDS
SEASON OF 1947

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FOREST INSECT SURVEY
STANISLAUS NATIONAL FOREST, CALIFORNIA, AND ADJACENT TIMBER LANDS
SEASON OF 1947

FIELD EXAMINATION.

Personnel: John E. Patterson, Entomologist, Forest Insect Laboratory, Berkeley, California; Assistant State Ranger Clinton Phillips, Sonora California; and J. E. Gray and E. C. Thomas, Stanislaus National Forest, Sonora, California.

Date: November 3 to November 7, 1947.

Methods: General ground reconnaissance; topographic viewing; and measurments of roadside plots.

AREAS EXAMINED.

Included in this survey were all the pine type forests of Stanislaus National Forest and contiguous privately-owned forested areas, with the following exceptions: The alpine regions north and east of Pinecrest, the region about Dardanelles and Alpine Lake, andthe Smoothwire section.

MOST IMPORTANT INSECT PROBLEMS FOUND.

Timber drain resulting from barkbeetle infestations is currently at a low level. These minor losses occuer, however, throughout the National Forest and on adjacent private lands, but chiefly in the fringe forests of the western boundary. The most important insect problems were found in the second-growth stands of the fringe type. These consisted of local infestation centers of Ips and Dendroctonus beetles which developed in the vicinity of logging slash and other ecological disturbances.

INSECTS RESPONSIBLE FOR PINE DAMAGE IN 1946 AND 1947.

Principal damage to ponderosa pine is attributed to the California pine engraver (Ips confusus) and the western pine beetle (Dendroctonus brevicomis). Damage to Jeffrey pine was caused by the Jeffrey pine beetle (Dendroctonus jeffreyi).

CHARACTER OF 1946 AND 1947 BARKBEETLE INFESTATIONS.

Infestations in the second growth ponderosa pine belt and in the fringe type below 4,000 feet altitude were characterized by groups of killed or infested trees indicating local aggressiveness. These group attacks had been induced and aggravated by slash and summer fires. Several such local areas developed infestations verging on epidemic conditions. However, since these areas were small they were not representative of the general fringe belt. Elsewhere throughout the survey region the infestations were found to be of a low endemic character. By comparison to the level of loss sustained during the preceding year, the 1946 and 1947 records showed a decrease in all areas.

TREND OF BARKBEETLE INFESTATIONS.

Measurment of timber killed by barkbeetles on the same sample plots each successive year form the basis for determining the trend of yearly infestations and loss. The intensity of the infestations in 1946 and 1947 as measured on the 3,740 acres of sample plots is given in the table under the following section. These data, together with the general observations made throughout the forested areas, indicate that the general trend of infestations has been downward. There were, however, some deviations on a few small areas where local disturbances resulted in an upward swing of beetle losses.

INSECT DAMAGE ON SAMPLE PLOTS, 1946 AND 1947.

The following table presents a summary of loss data secured on sample road strips and plots:

		Number of trees killed - B. F. loss per acre					
		1946		1947*		1946	1947*
Survey plot.	Acres	Trees	Volume	Trees	Volume		
Esmeralda RC	300	7	1,160	4	710	4	2
Solinsky RC	600	6	12,940	4	4,410	21	7
Jesus Maria RC	800	21	3,990	16	2,400	5	3
R. R. Flat RD	260	10	3,100	6	1,800	12	8
Blue Mountain RD	240	5	6,630	3	3,370	28	14
Pinecrest RD	160	3	5,970	1	810	37	5
Buck Meadows RD	480	8	2,150	6	2,640	4	6
Mather RD	900	11	3,200	5	2,300	4	2
	3,740		39,140		18,440	10	5

(*) Partial loss only. Complete loss data for this year will not be available before spring of 1948.

CURRENT INFESTATION CONDITIONS IN WORKING CIRCLES.

In accordance with last year's report current infestations are here discussed by established working circles.

WC 106 - San Andreas: Past insect losses have been relatively heavy in these stands. Recent losses have, however, registered a sharp decline.

Esimated rate of pine loss- board feet per acre

1945	30
1946	22
1947	12

Intensity of the 1946-1947 infestations have varied greatly in different sections of the area. The greatest number of trees have died in the fringe type and in the second growth stands of the western border. Conditions bringing about this result have been accumulation of sporadic logging and other slash made during the attack seasons. These conditions are particularly acute locally in the West Point and Railroad Flat sections, but are also present in some of the back sections, notably Blue Mountain. A very striking illustration of slash influence in inducing attack on standing trees is evident along a power line constructed during the summer of 1947, between San Andreas and West Point. The trees slashed out of the right-of-way were left intact and furnished prime breeding material for Ips and Dendroctonus beetles. When the broods of these beetles emerged from this material they attacked the nearby standing trees. As a result a continuous group of killed ponderosa pine trees appeared during the fall period paralleling this pole line. Logging slash resulting from sporadic operations has fostered similiar losses in standing trees in these stands.

WC 107 - Stanislaus: Infestations have been static on this area for a number of years. Recent losses show no change in this trend. They are of low endemic character, particularly in some sections as at Pinecrest where past losses during certain years were sufficiently severe to warrant control action, which was taken.

Estimated rate of pine loss - board feet per acre

1945	40
1946	25
1947	20

WC 108 - Sonora (Rose Creek): The marginal stands of this area are largely composed of second growth ponderosa pine. They are highly susceptible to insect attack. Past losses have been high and damaging. A local epidemic developed in 1946 on the Twain-Harte homesite area. During 1947 this infestation increased in intensity and spread to surrounding stands with the result that many trees died on the developed

area. It is estimated that a total of 200 ponderosa pine trees died from barkbeetle attack on the Twain-Harte area alone during the 1947 season. This infestation does not extend into National Forest lands. Early control by direct methods is recommended on this area.

WC 109 - Tuolumne: The general insect infestation conditions of this area are extremely varied with very little loss over the greater part. No ground measurments were made in the 1947 survey but sampling was carried out on the Jawbone section. Here several small groups of attacked trees developed during the season, principally adjacent to logging operations which were suddenly shut down. These flareups appeared to be of a transient nature and are expected to subside with the season.

WC 110 - Groveland: Infestations on this area have recently reached an all time low. Very little loss was visible in any part of the area.

Estimated rate of pine loss - board feet per acre

1945	12
1946	10
1947	6

WC 111 - Merced: No aggressive infestations were encountered on this area. Examinations in stands affected by past infestations showed current losses to be well below normal. Epidemic losses which followed the Sawmill Mountain fire in 1945 and 1946 have largely subsided so that these stands suffered only slight losses during the season.

Estimated rate of pine loss - board feet per acre

1945	40
1946	35
1947	10

INSECT CONTROL RECOMMENDATIONS.

Early control by direct measures is recommended on the Twain-Harte home site area. The seasonal loss on this 400-acre tract totaled about 200 ponderosa pine trees killed by a combination of Ips confusus, and Dendroctonus brevicomis, attacks. The infestation is highly localized and it should be possible to remove it at minimum cost and labor. Elsewhere on this survey area no aggressive barkbeetle infestations were encountered other than transient small concentrations bordering slash, which are considered to be of short duration. Because of this status no other control work appears warranted, or is recommended.